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VI. An Account of a BOOK.

Novæ Hypotheseos, ad explicanda febrium intermittentium Symptomata & Typos excogitatæ Hypotyposis. Unâ cum Ætiologia Remediorum ; speciatim vero de curatione per Corticem Peruvianum. Accessit Dissertatiuncula de Intestinorum motu Peristaltico. Authore Guilielmo Cole, M. D. Lond. in 8°. 1693.

THE Learned Author declaring himself unsatisfied with the former *Hypothesis* about the Production of *Intermitting Fevers*, but supposing, from the Consideration of the Symptoms, that their Origine is owing to the *Nervosum Genus*, has, agreeably to that Conjecture, formed to himself a new one ; by which, (having revolv'd it long in his Thoughts) he thinks he can give himself a clearer Account of the reason both of the Symptoms and Method of Cure, (particularly that by the *Cortex Peruvianus*) than from what others have laid down.

To clear his way to it, he first takes notice of Four *Hypotheses* concerning them, which have either chiefly obtained, or, he thinks are the most considerable, viz. That of the *Ancients*, who deduce them from *Humours* putrifying in *primis viis* ; of *Sylvius*, who places his *Minera* in the *Pancreas* ; of *Dr. Willis* in the Mass of Blood ; of *Dr. Jones* in the *Habit of the Body* : Of his Dissent from each of which he alledges some Reasons ; though in the general, (agreeably to three of them) that a *Fermont* to be somewhere recoded out of the Road of the circulating Blood, and there gradually matured, is necessary to produce an interpolate Distemper.

In order to determine both the Matter and Form of this Ferment, he lays down some obvious Conditions of it ; of which though some may agree to one, some to another of the enumerated Hypotheses, yet he endeavours to shew, that All will not agree to any one of them, and therefore thinks such a one is to be searched for, to which they easily will.

His own Opinion therefore is, That the *Cortical part of the Brain* may be the primary *Seat* of this Febrile Ferment ; and that the Liquor to be there separated, becoming disproportionate to the Animal Functions, is the *Minera* of it ; and, being thence dispensed into all parts of the *Systema Nervorum*, may by degrees rise to such a Maturation as may produce the Fits.

Here he takes occasion to endeavour to establish the Existence of the *Nervous Juice*, in confirmation of what he had heretofore delivered, and indeed (for a main Argument to evince it) to revive and farther make out, by a somewhat long Deduction, the Opinion of Dr. *Ent, Glisson, &c.* That we are not only directly, but *materially* nourished by that Juice ; for a particular Account of which we refer to the Author.

To this Notion of his, he endeavours to shew, that the alledged Conditions all agree ; which done, he lays down his *Hypothesis* of the manner of the Production of the *Paroxysme* minutely ; supposing, that some Incongruous, though at first inoffensive, matter (on the score of *Procatartick* Causes he points at) being admitted into the Roots of the Nerves in the *Cortical* part of the *Brain*, is from them propelled into the *Medullary*, and thence into the Tracts of the *Nerves* and *Fibres* (which he takes to be but *Propagines Nervorum*) of the whole Body ; in which moving slowly, it by degrees maturates into a *Fermentative Substance*, and acquires an Acrimony : With which when they are filled, and the Acrimony becomes troublesome, they contract themselves to expel it,

it; but it being confined for some time (for Reasons alledged) does necessarily put them upon repeated Contractions (in which he places the Nature of the *Rigor*) till they at last expel it into the Mass of Blood, amongst whose very *Heterogeneous* Particles (many of which too, are *Sulphurous*) it makes a great Commotion, which cannot cease till both the Particles of this Ferment, and the disturbed Ones of the Blood, are subdued and reduced into order, or expelled. But this *Atony* of the Glandules of the Brain continuing, nay in some measure increased by the Disease, the fore-mentioned Admission of more *Heterogeneous* Matter must be repeated, as, in the same order, the Maturation, Eruption into act, and Extrusion of it, with the alledged Consequents; and that so often till either by Medicines, or the change of Season, or other Causes, these Glandules come to recover their Pristine *Force*.

This *Hypothesis* he endeavours to confirm from some obvious general Considerations, and then proceeds first to enumerate, in their order of Invasion, the *Symptoms* which most usually offer themselves, and then to solve them from his *Hypothesis*.

This done, he considers the *Types*; which not having been accounted for to his Satisfaction by former Authors, he takes himself to be obliged to try whether they can be from his *Hypothesis*, and therefore offers a new one about them to consideration.

Therefore in the first place he considers that the three sorts of regular and usual *Types*, *Quotidian*, *Tertian*, and *Quartan*, do generally observe certain determinate Seasons of the Year, and not frequently happen at others, *viz.* *Quotidians* in the *Winter*, *Tertians* in the *Spring*, and *Quartans* in the *Autumn*; but that rarely *Intermittents* begin in the Summer. In the several Constitutions of these Seasons he supposes our Blood and other Juices obtain likewise different Constitutions, which he

explains ; so that there must, in general, be a difference in the circumstances of Diseases, though of the same Denomination, which happen in either of them. But to sign a reason why we have *Periodical* returns, he considers, *First*, That we generally *Eat* at determinate Times, from whence the admission, as well as distribution of the *Nutritious Juice* (which he before supposed to be by the *Nerves*) must be *Periodical*. But this being not sufficient, since most persons eat oftner than once a day, he considers, *Secondly*, That we sleep ordinarily but once in 24 Hours, at which time the *Brain* being relaxed, admits the Suppliments of Nourishment for the next day, as upon waking it begins, and all day after continues gently to protrude it (at least more vigorously) through the whole *Fibrous Systeme* ; in which time it advances in it's Maturation, as usually toward becoming a fit *Nutritious Juice*, so now, being in some degree incongruous, toward a *Febrifick Ferment* ; so that, *cæteris paribus*, a *Daily* Period (unless when a greater, or more depraved, quantity than usual of *Heterogeneous* matter abounds) may be hence expected. But to determine the reason of longer *Periods*, he supposes, *Thirdly*, We must have recourse to the different Constitutions of the year : And in the *Spring* the Air abounding (by general consent) with *Nitrous* Particles, which though active, and thence apt to exagitate and exalt a Morbifick Ferment, yet helping to constitute the Principles of *Vitality*, and in some degree corroborative of the *Tone* of the *Glandules*, they hinder, in some measure, the encrease of the Morbid matter in them, so that so much cannot be congested in the *Systeme* of the *Nerves* and *Fibres* as to rise to a degree of Vellication able to produce a *Paroxysme* ; whence there is a necessity of a *second Night's supplies* to yield a proportionable quantity to the effect. But in the *Autumn*, *Acids* abounding, which both in some degree repress Fermentation, and withal help to constringe the *Tone* of the parts,

parts, the Congestion cannot be made so suddenly as in other Seasons ; and therefore, since the admission of the matter is had in Sleep, enough cannot be taken in under a *second Night's Interval* to supply enough for a Turgescence ; which the nature of the matter in some measure hinders from rising up to it.

The *longer* Periods he supposes are deducible from a greater disposition to Acidity in the *Nervous Juice*. And that the Seat of the Distemper is there, the Consideration of the *Symptoms*, wholly or chiefly affecting the *Nervosum Genus* in those longer Periods, so far as he has observed, seem to him a cogent Argument.

As to the *Anomalies* of them, he supposes them, in the *Fourth* place, deducible partly from the *Variety* of the Constitutions of *Particular Persons*, partly from particular *Changes* of the *Air*, *Aliments*, &c. and from *external occasions*, which cannot be enumerated.

Then he comes to consider the *Method of Cure* : And since several Administrations are necessary (some at one time of the Distemper, some at another ; and some for some Persons, some for others, according to various Circumstances) he goes through them, and endeavours to render an Account in general, on what Score *Plebotomy*, *Vomits*, *Purgers*, *Diaphoreticks*, *Diureticks*, *Altering Medicines*, as *Digestives*, *Specificks*, *Opiats*, and *Pericarpia* produce their effects, when 'tis proper in their turns to use them. After which he delivers a sufficient account of the particular Methods which he conceives proper for each of the three sorts of intermitting Fevers.

But since the *Cortex Peruvianus* is become so Celebrated, as well as it is an effectual Remedy for them all, he in an entire Chapter offers an *Ætiology* of it, agreeably to the Hypothesis he has laid down of their Source, and from Mechanical Principles. To form which, he, 1st, enumerates several *Observables* relating to its known effects and circumstances of its Exhibition. 2^{ly}. He considers

siders the *Texture* of it, which he takes to be very compact, and not quickly dissoluble by the Ferments 'tis now to meet with. *3ly.* He enquires into the *Scene* of its Operation, where he traces it through the *ways of the Chyle*, those of the *Blood*, the *Habit* of the Body, and the *Systema Nervorum*, and thinking (for the Reasons he alledges) 'tis not to be found, adequately to the effect, in the three former, he places it in the last, and endeavours to make it out from several Deductions. *4ly.* He describes in a Mechanical way the *manner of its Action*; supposing that some of its Particles having undergone several Comminutions (tho not a Dissolution) from the various Firmments they have passed, arrive at last, with the Blood, at the Brain; and being, with some of its Vehicle, separated there from the grosser parts of both, in the Cortical Glandules, they are admitted into the tubulated Roots of the Nervous Tree, by the way that the Nutritious Juice is supplied; into which those of them, which are not small enough to pass those Straits along with the Juice, being just admitted, stick there till other appelling Substances give them a farther Comminution, and so pretrude them along: But on the score of their irregular sides he supposes they leave room (indeed) between them and the sides of those round Vessels for the finer Juice to pass, but preclude the entrance to the grosser (which he has supposed, is the matter that makes the Febrile Ferment) and thereby prove no way injurious to the Animal Functions, since enough, and that the purest, may pass by them to actuate the Nerves. Whilst these Particles stick here, he conceives that by softly caninating the including Coats with their Angles, they may cause them to contract themselves to their due Tone, and they crumbling by degrees as that is doing, leave the part in its natural Estate, and so (without a fresh Cause) the Distemper ceases. *5ly.* He endeavours to shew, that all the mentioned *Observables* agree to his Hypothesis. *Lastly,* To accomodate these Speculations to Practice, he lays down briefly the Method to be observed in relation to the giving it; thinking withal, it may be useful in most Chronical Periodical Distempers; and concludes with a couple of Histories, to confirm his Notion of the Seat of the Distemper, and the Scene of the Operation of the Cortex.

His subjoined Discourse concerning the Spiral Fibres of the Intestines having been many years since published in *English* in the Philosophical Transactions, he now, at the importunity of some Friends, has thought fit to publish in *Latine*.